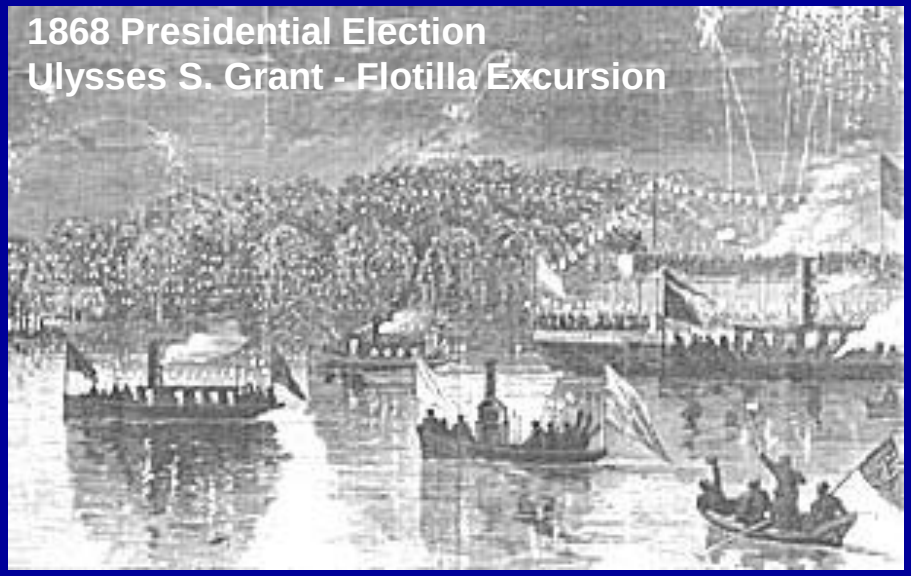
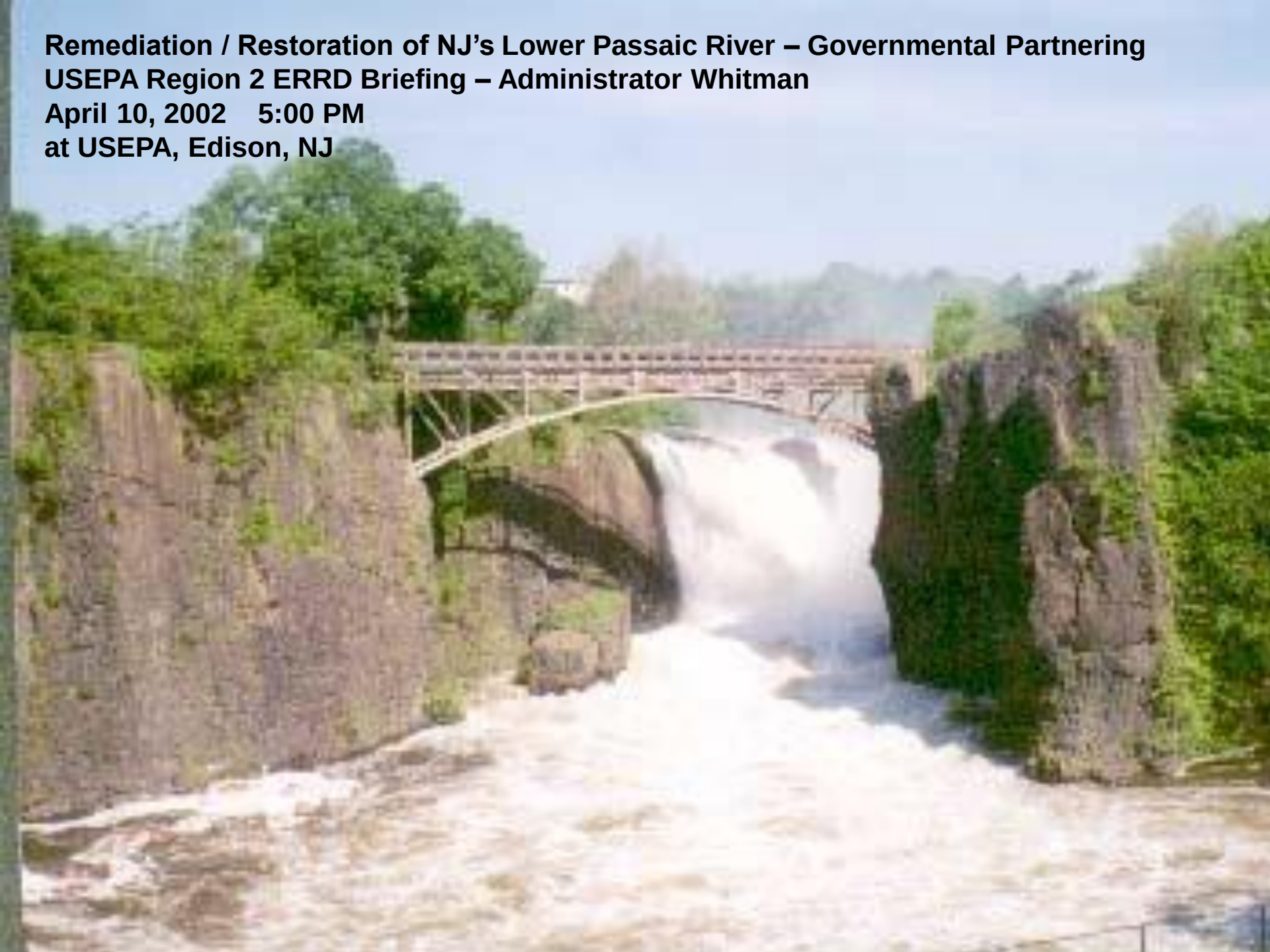

1868 Presidential Election
Ulysses S. Grant - Flotilla Excursion


Passaic River circa 1910


Electric Light Factory - Newark

Remediation / Restoration of NJ's Lower Passaic River – Governmental Partnering
USEPA Region 2 ERRD Briefing – Administrator Whitman
April 10, 2002 5:00 PM
at USEPA, Edison, NJ



1972 Clean Water Act
GOAL: Swimmable & Fishable

1983 Goal: Swimmable / Fishable

2001 Reality: “Boat-able” / “Catch & Release”

20?? Goal: Swimmable / Fishable

EPA Accomplishments:	1972	2000
People served by Sewage Treatment	85,000,000	173,000,000
Waters safe for Swimming / Fishing	33%	67%

KNOW:

1. **Passaic River Sediments are contaminated**
2. **Impacts to human & ecological health**
3. **Impacts to the regional economy**

REQUEST:

1. **Fund an integrated, scientific study**
2. **Develop and evaluate management options**
3. **Partnership with USACE, NJDOT, and NJDEP**

COST:

$10,000,000 USEPA **$1-2MM/year**
$ 9,000,000 USACE/NJDOT-OMR *(recoverable)*

Remediation / Restoration of NJ's Lower Passaic River by

Government/Stakeholder Partnering

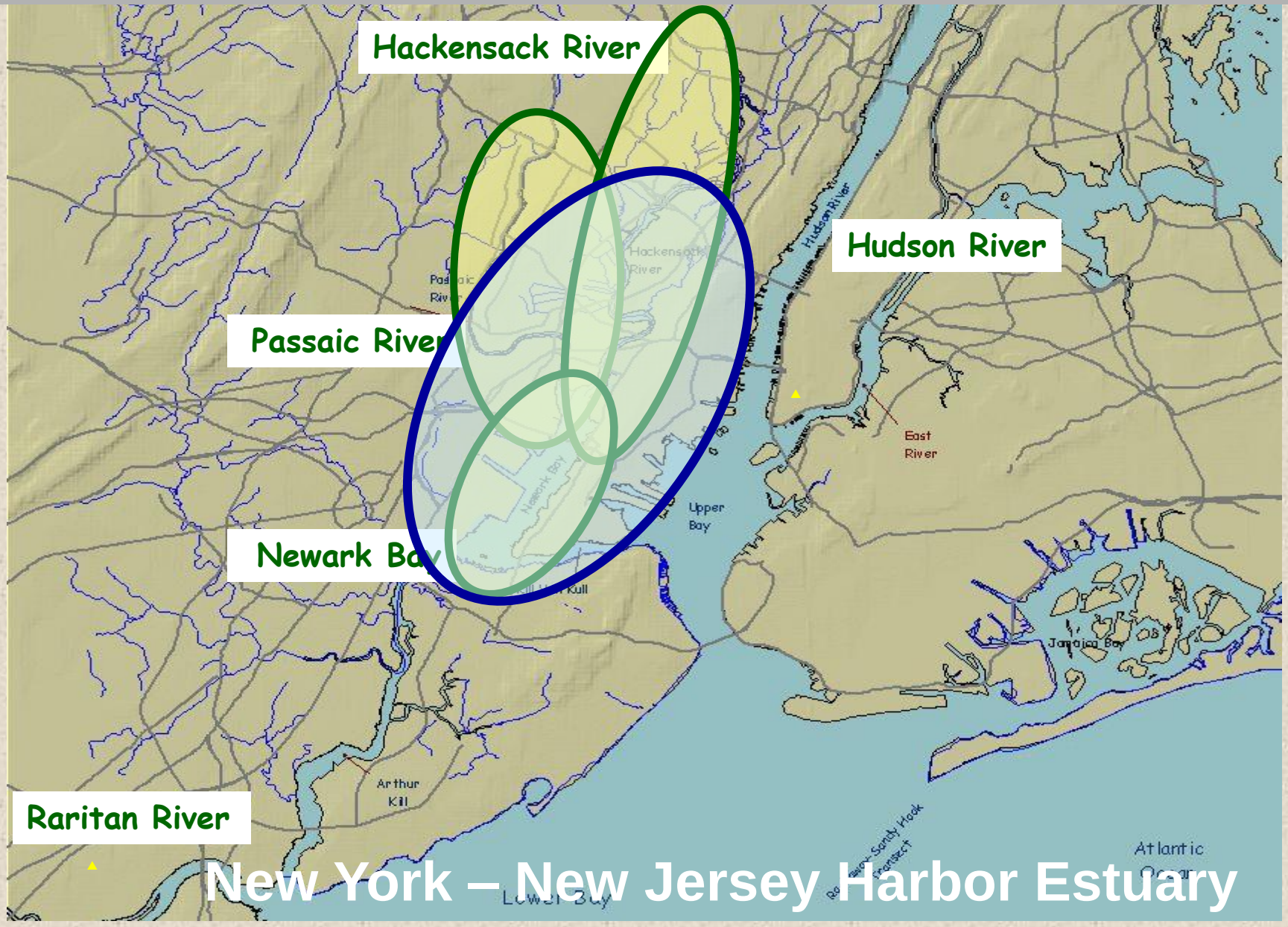
The EPA Region 2 ERRD TEAM

- **ORC**: NJ Superfund Branch
- **CD**: Intergovernmental Affairs Branch
  Public Outreach Branch
- **DESA**: Laboratory Branch
- **DEPP**: Community & Ecosystem Prot. Br.
  Air Program Branch
  Water Programs Branch
  WRDA Decontamination
- **OPM**: Information Systems Branch

Overview

1. **The RESOURCE:** Tidal Passaic River / Newark Bay
2. **The PROBLEM:** Contaminated Sediments
3. **The CAUSE:** Progress/Industrialization
4. **The STRATEGY:** Government/Stakeholder Partnering to Integrate Existing Programs
5. **The SOLUTION:** _____

1. The RESOURCE: Passaic River / Newark Bay



1. The RESOURCE: Passaic River / Newark Bay

DEMOGRAPHICS

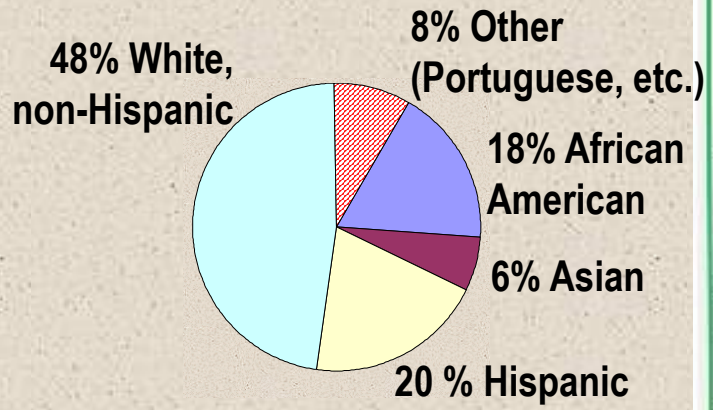
Population (3,300,000)

40 % of NJ population

302,000 < Poverty Level

Counties

Bergen,
Essex,
Hudson,
Passaic &
Union



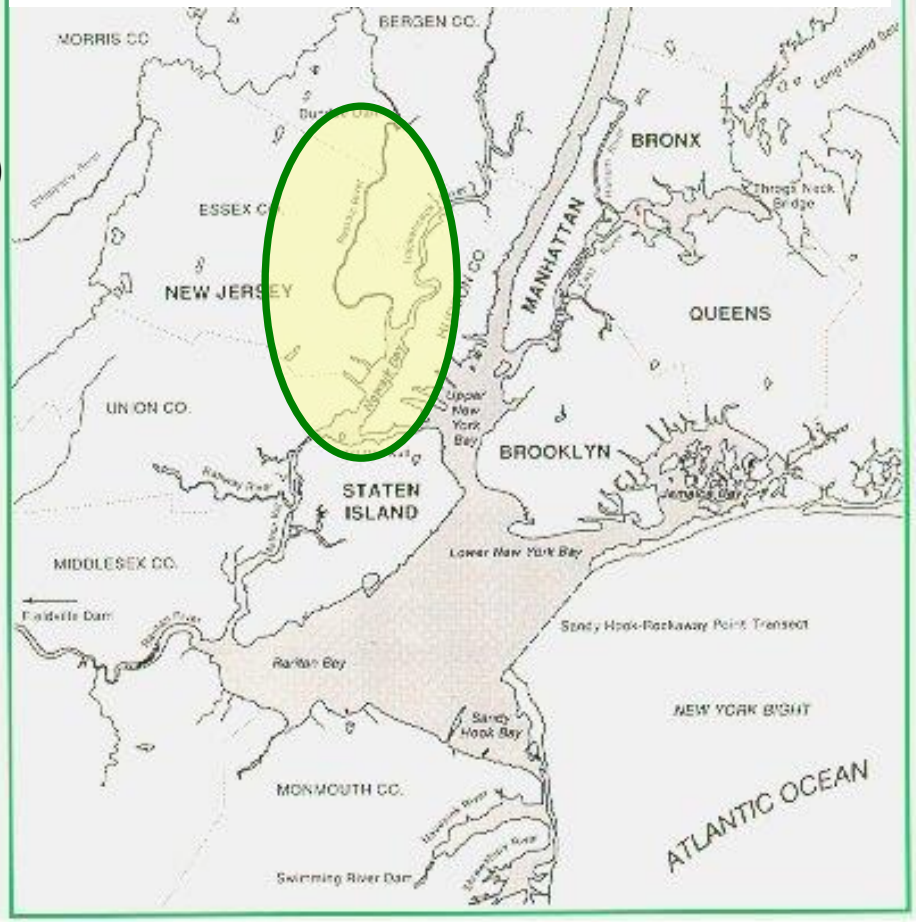
multi-cultural

NJ's Four Largest Cities

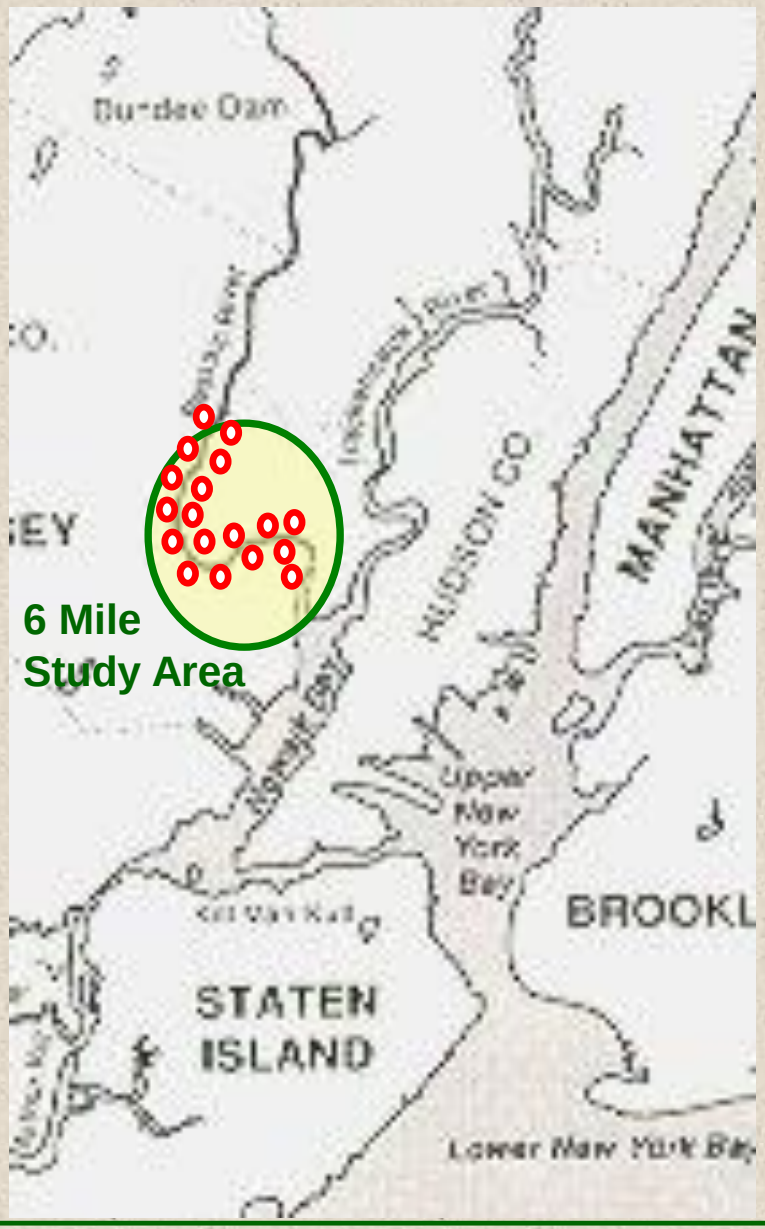
1. Newark
2. Jersey City
3. Paterson
4. Elizabeth

and 122 other municipalities

Passaic – Hackensack -Newark Bay Tidal Sub-System of NY – NJ HARBOR ESTUARY



1. The RESOURCE: Passaic River/Newark Bay

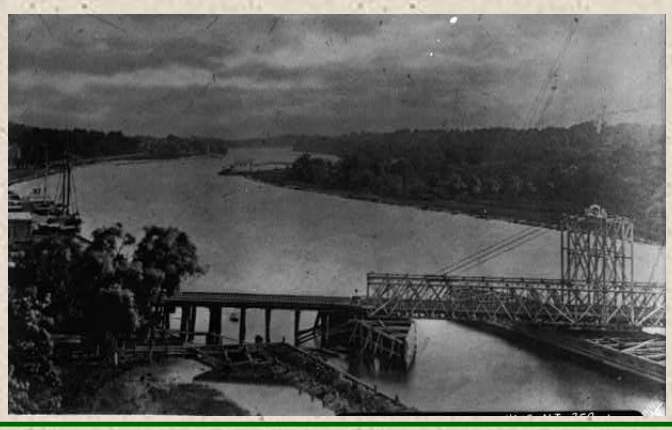


USES:

Fishing & Recreation

Transportation

Wastewater Assimilation

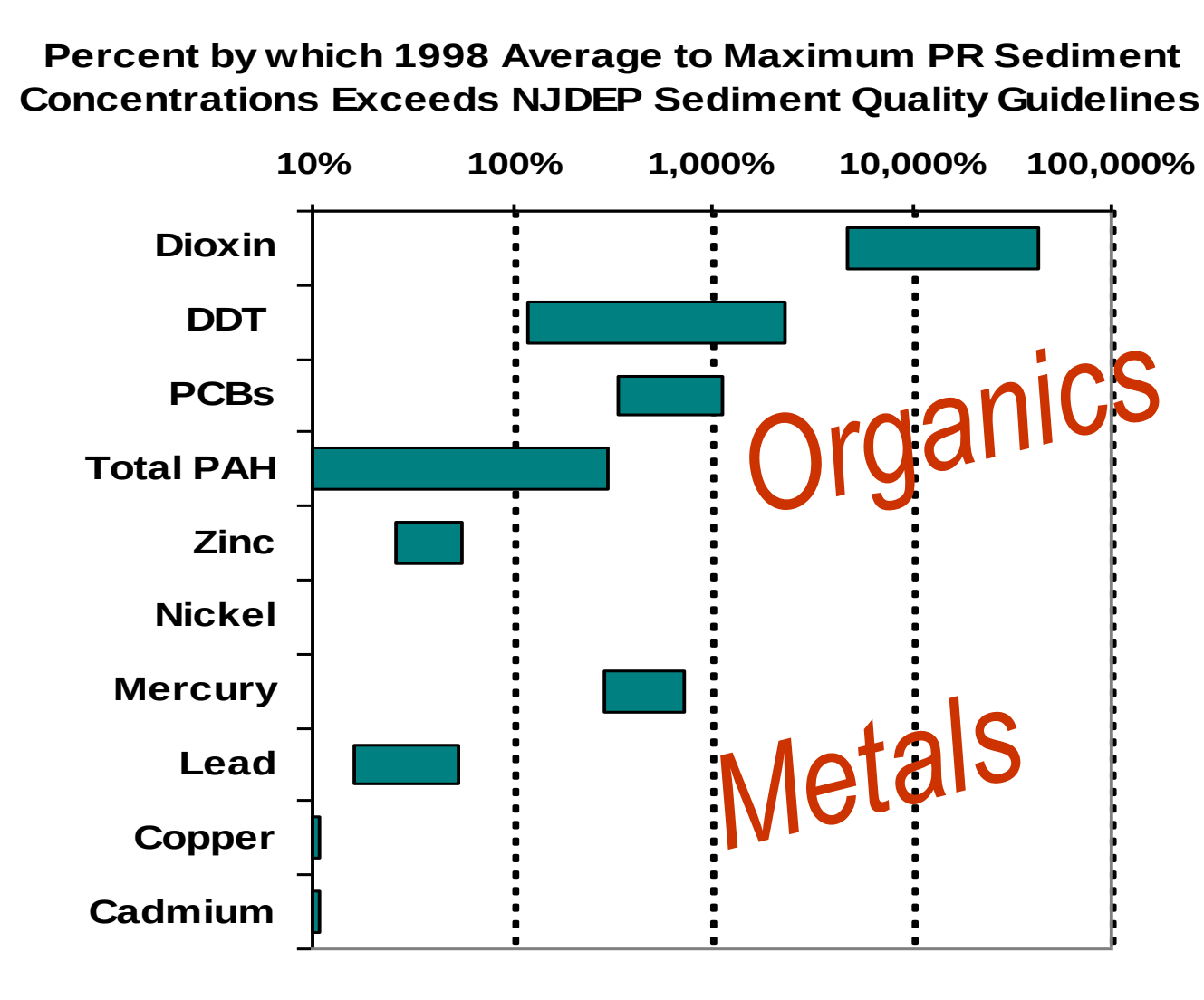


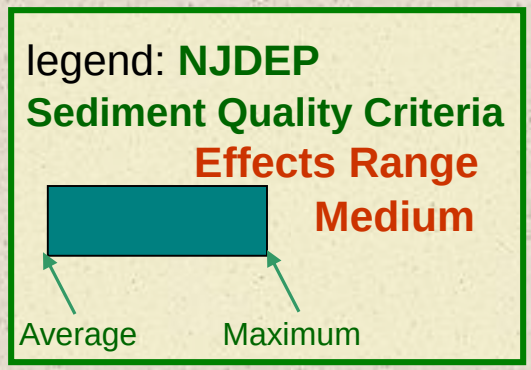
2. The PROBLEM: Contaminated Sediments

- **1983** elevated dioxin levels found in fish and crabs
- **1983** Fish and Crab ‘do not eat’ advisories
- **1994** Started PRSA RI/FS
- **2001** ~ 30% of anglers still catch & keep
- **2002** Re-examining Options

Tri-lingual Advisory Signs

2. The PROBLEM: Contaminated Sediments

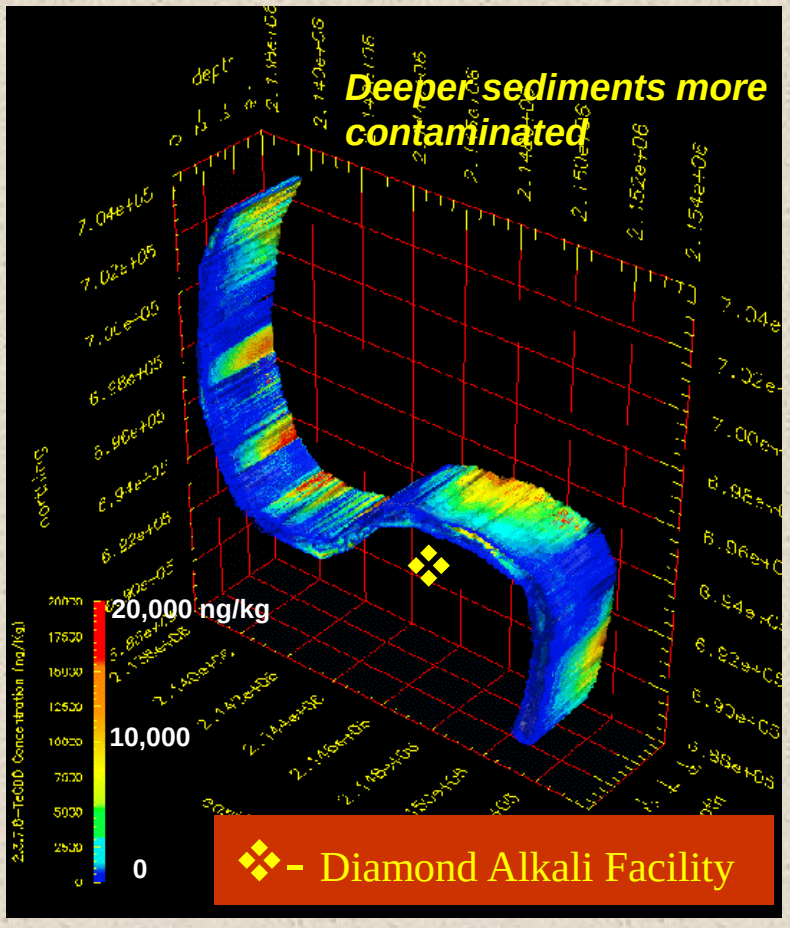




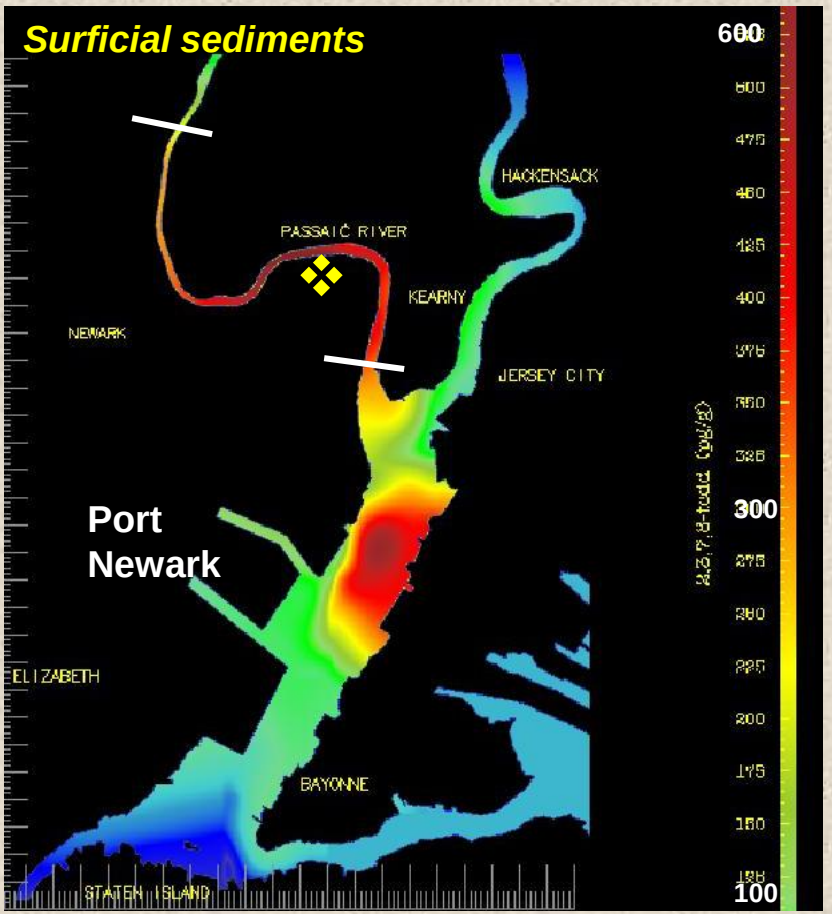
1998 Data Exceeds NJDEP SQG by Orders of Magnitude

2. The PROBLEM: Contaminated Sediments

DIOXIN



Passaic River (3D)

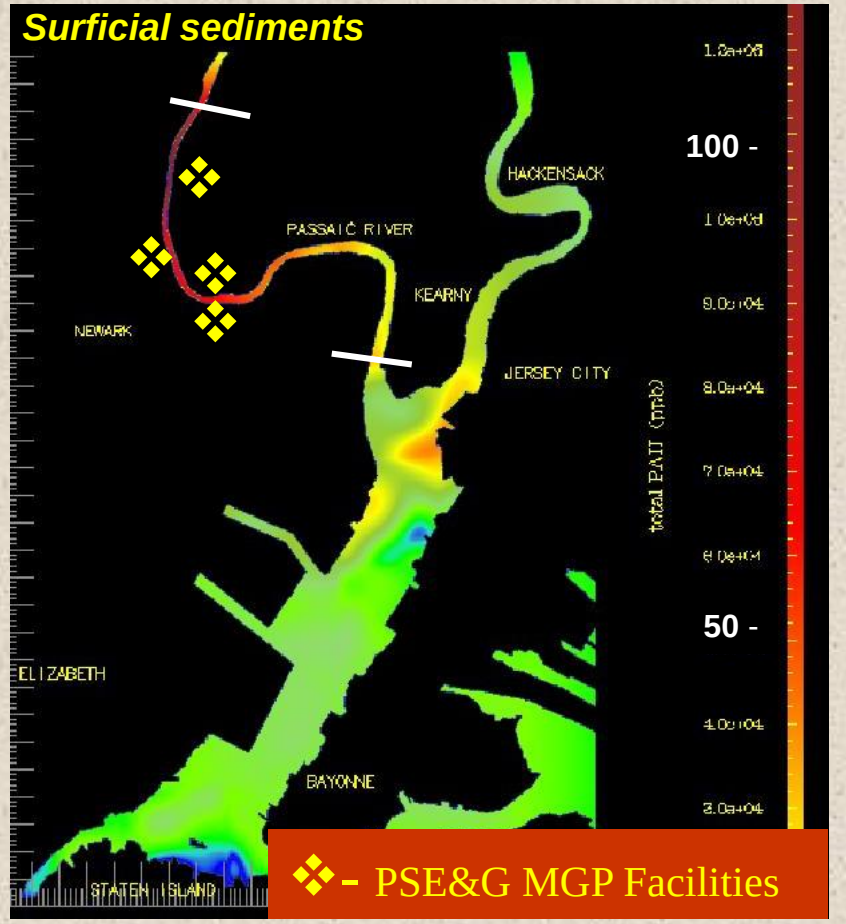


Passaic River / Newark Bay

Canadian: 1 ng/kg

2. The PROBLEM: Contaminated Sediments

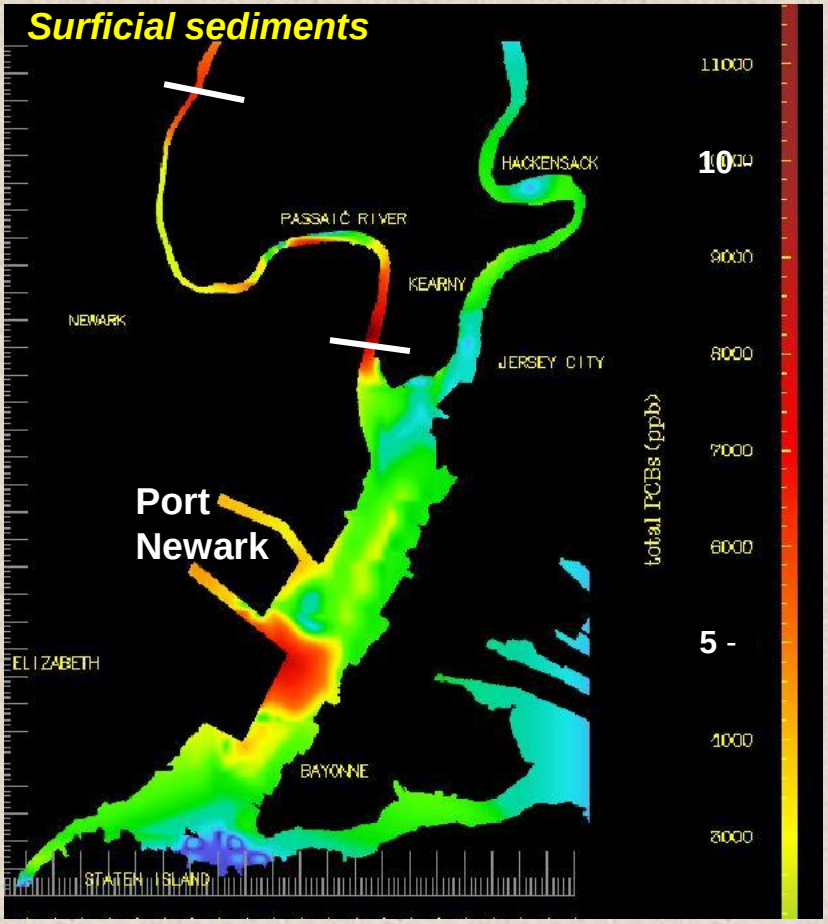
PAHs



Passaic River / Newark Bay

NJDEP: 4 / 45 mg/kg

PCBs

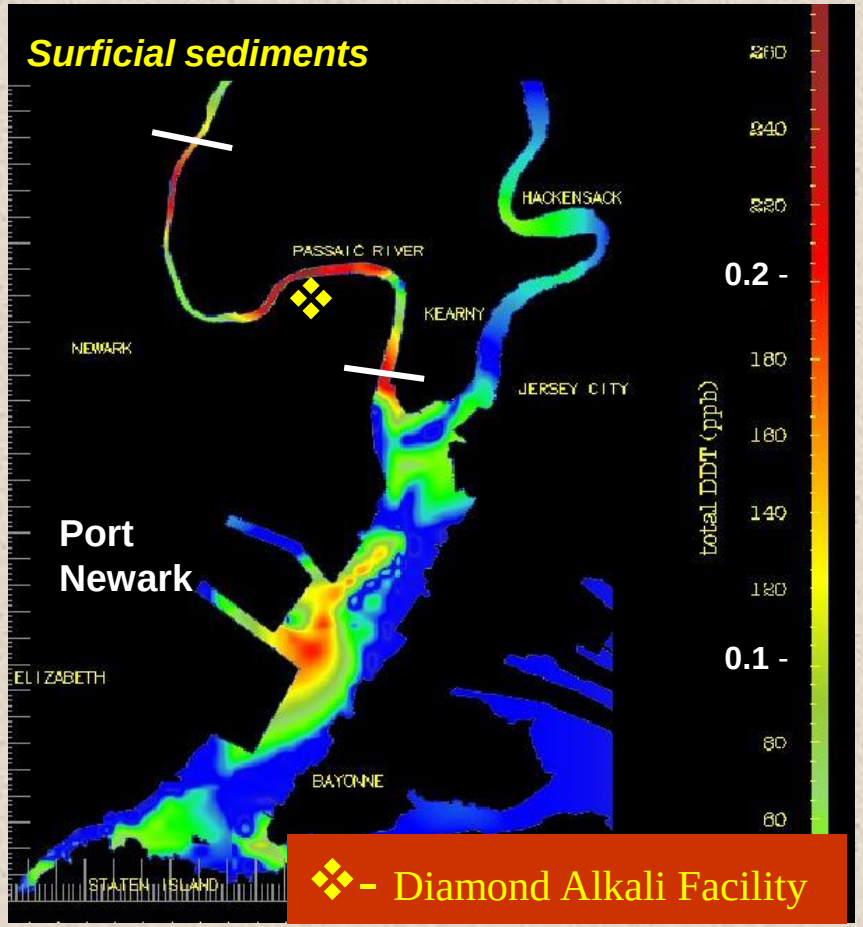


Passaic River / Newark Bay

NJDEP: 0.23 / .180 mg/kg

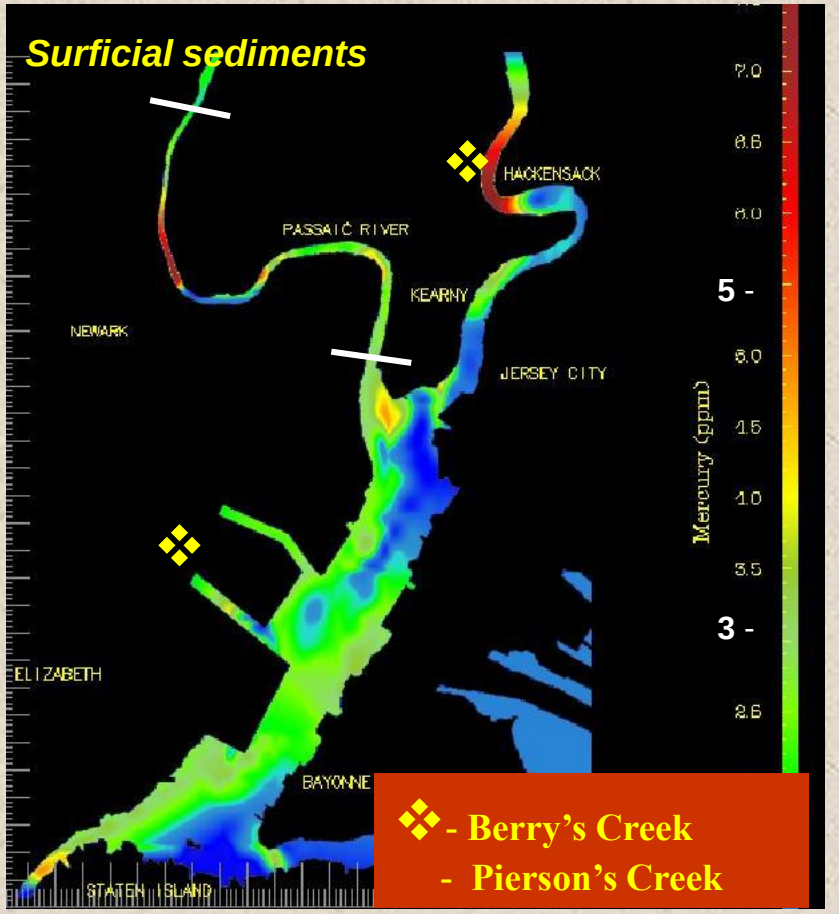
2. The PROBLEM: Contaminated Sediments

DDT



Passaic River / Newark Bay

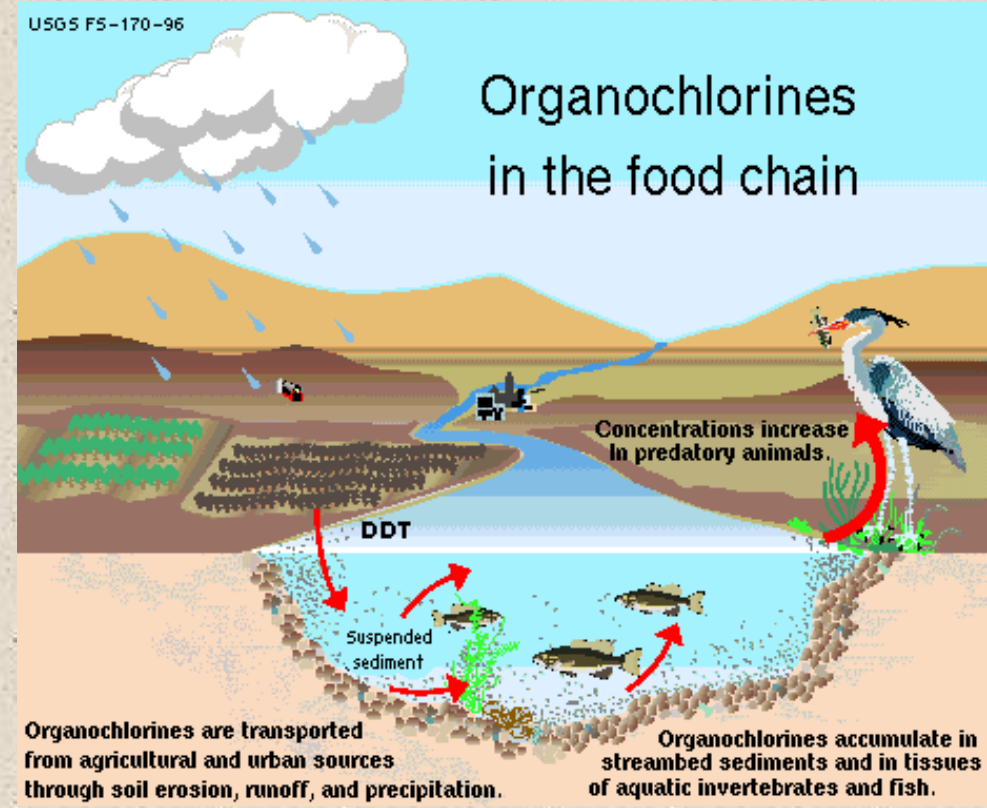
MERCURY



Passaic River / Newark Bay

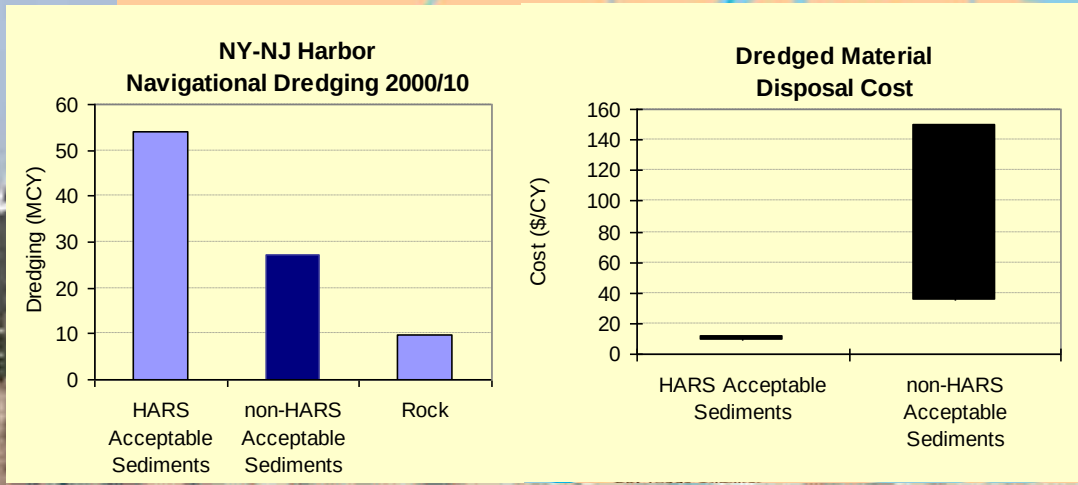
2. The PROBLEM: Contaminated Sediments

- ecological health effects
- human health effects



2. The PROBLEM: Contaminated Sediments

- ecological health effects
- human health effects
- economic impacts on navigational dredging disposal costs (no ocean disposal)



Potential incremental cost 2011 to 2020 ~ $1,000,000,000

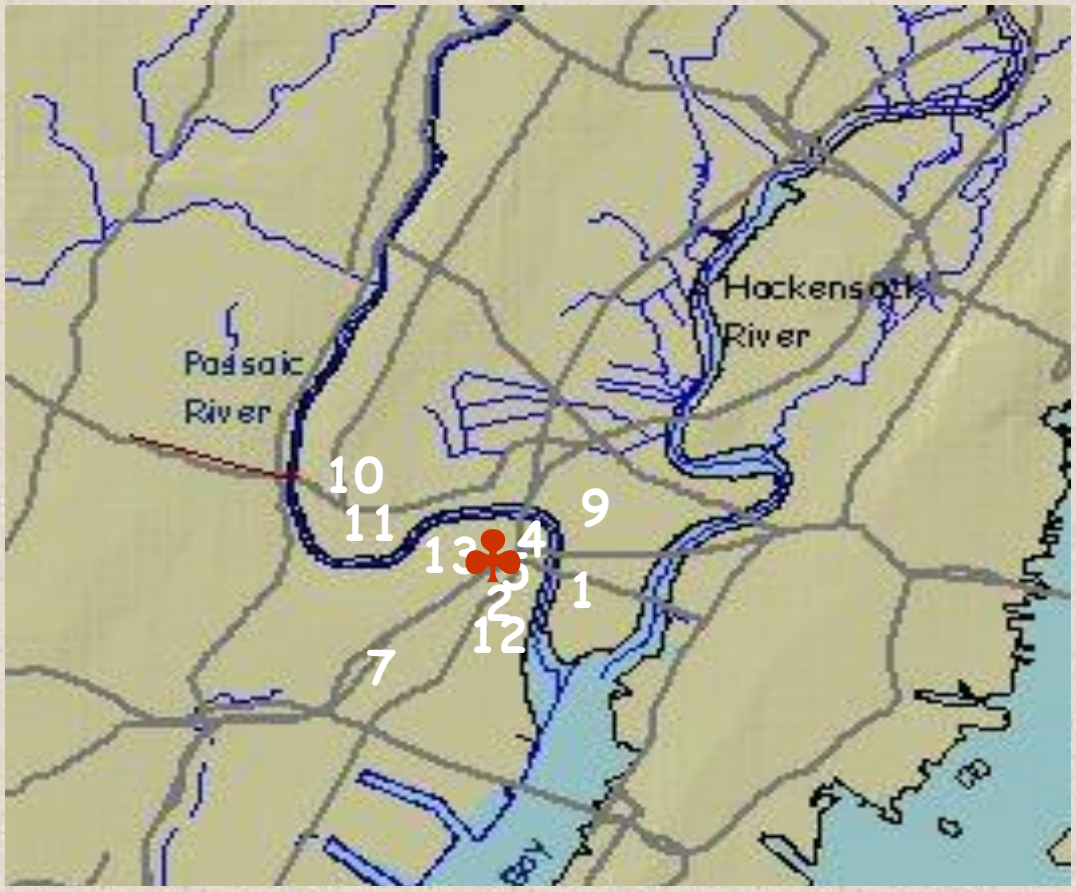
VOLUME * INCREMENTAL COST = $$$

3. The CAUSE: Progress / Industrialization

Since the early/mid 1800's – Newark's economic boom included the following industries:

- Chemicals
- Leather
- Paints & Dyes
- Petroleum Refining
- Shipping
- Creosote Wood Preservers
- Manufactured Gas
- Paper Products
- Pharmaceuticals
- Tanneries
- Electric Power Generation
- Metal Recyclers
- Pesticides
- Rubber Manufacturers
- Textiles

3. The CAUSE: Progress / Industrialization



14 PRPs Noticed

1. Alcan Aluminum Company
2. Ashland Chemical Co.
3. Bayer Corporation
4. Benjamin Moore & Co.
5. Chris-Craft Industries
6. Occidental Chemical Corp.*
7. E.I. Du Pont de Nemours
8. Eastman Kodak Company
9. Monsanto Company
10. Otis Elevator
11. PSE&G
12. Reilly Industries
13. Sherwin-Williams Company
14. 360 N.Pastoria Env.Corp.

Scores of other industries plus municipalities, local sewerage commissions, and CSO dischargers are being evaluated.

** OCC is the respondent under the AOC that addresses the Diamond Alkali Superfund Site – Passaic River Study Area*

Diamond Alkali Superfund Site

80 & 120 Lister Ave., Newark, NJ plus the areal extent of contamination

1951-69 Diamond Shamrock manufactured pesticides *(DDT, 2,4,5-T, etc.)*

1983 EPA National Dioxin Strategy *(2,4,5 Trichorophenol Mfgs.)*

1983-85 NJDEP led (removal, RI/FS etc.)

1984 Superfund National Priorities Listing

1984-86 Emergency Response / Removal Activities

1987 EPA: ROD for land-based Interim Remedy (OU1)

1994 PRP / EPA AOC for six-mile Passaic River RI/FS

1995 Major sediment sampling initiated

2001 Ecological Sampling Plan completed

2001 Land-based (OU1) Interim Remedy near completion

Why this new initiative ? Since 1983:

REGULATORY DEVELOPMENTS

1. **USEPA led NY-NJ Harbor Estuary Program** (HEP)
2. **NJDEP ongoing CWA TMDL projects (**watershed based)
3. **USACE Lower Passaic River Ecosystem Restoration Study**
4. **USACE Dredged Material Management Plan**
5. **PANYNJ Port Improvement Plan – 50 ft. channel (w, NJ-OMR, etc.)**

SCIENTIFIC / ENGINEERING UNDERSTANDING

6. **New data – New Understanding (**PRSA Study, HEP Study, etc.)
7. **Congress/NRC Contaminated Sediment Risk Mgmt. Strategy**
8. **Sediment Quality Criteria Development (AVS, EqP, SEM, etc.)**
9. **Passaic River / Newark Bay: integrated complex ecosystem**
10. **Six mile Study Area is ineffective**

Why Need to Expand Study?

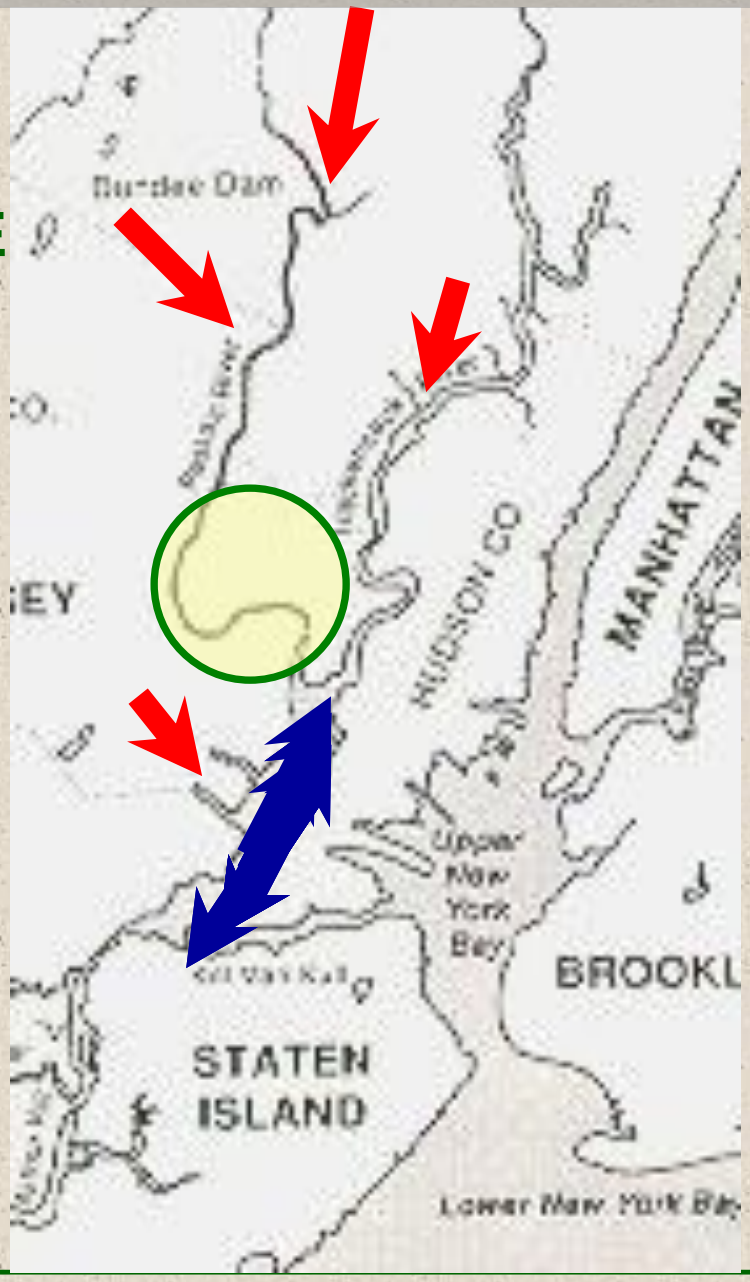
CURRENT GEOGRAPHICAL SCOPE

START: 0.8 miles above mouth with Newark Bay

END: 6 Miles Upstream

LIMITATIONS:

- **Upstream Sources**
- **Estuary Tidal System (potential for recontamination)**
- **Downstream Sources**
- **Multiple PRPs (outside study area)**



4. The STRATEGY: Stakeholder Partnering

AGENCY	REGULATIONS / PROGRAMS
EPA United States Environmental Protection Agency	Superfund / Brownfields Clean Water Act /RCRA

4. The STRATEGY: Stakeholder Partnering

AGENCY	REGULATIONS / PROGRAMS
EPA United States Environmental Protection Agency	Superfund / Brownfields Clean Water Act /RCRA
	Brownfields /Clean Water **Urban Renewal** **Environmental Remediation** *(ISRA)*

4. The STRATEGY:

Integrate existing programs

AGENCY	REGULATION
EPA United States Environmental Protection Agency	Superfund / Brownfields Clean Water Act /RCRA
	Brownfields /Clean Water Urban Renewal Environmental Remediation
US Army Corps of Engineers®	**Navigational Dredging** **Ecosystem Restoration** *(Water Resource Dev. Act)*
Office of Maritime Resources NJ Department of Transportation	

4. The STRATEGY:

Integrate existing programs

AGENCY	REGULATION	SYNERGY
EPA United States Environmental Protection Agency	**Superfund / Brownfields** **Clean Water Act /RCRA**	1
	Brownfields /Clean Water **Urban Renewal** **Environmental Remediation**	+ 1
US Army Corps of Engineers® / Office of Maritime Resources NJ Department of Transportation	**Navigational Dredging** **Ecosystem Restoration** *(Water Resource Dev. Act)*	+ 1
		> 3

US EPA

	Superfund Remedial Process	Acronym
Identify Potential Problem	NPL Listing	NPL
Assess nature and extent of contamination and associated health and environmental risks	Remedial Investigation	RI
Develop alternative cleanup strategies	Feasibility Study	FS
Select Remedy	Record of Decision	ROD
Technical Plans and Specs.	Remedial Design	RD
Construction, etc.	Remedial Action	RA
Activities which ensure clean-up working	Operation & Maintenance	O&M
Site Officially Clean.	Deletion from NPL	NPL
FUNDING	**Responsible Parties Pay (joint & several)**	

Different Agencies - Compatible Goals

"Remediation and Restoration"

	US EPA		USACE
	Superfund Remedial Process **Risk Driven**	Acronym	**WRDA** Restoration Process **Cost – Benefit Driven**
	Identify Potential Problem	NPL Listing	NPL	Reconnaissance
	Assess nature and extent of contamination and associated health and environmental risks	Remedial Investigation	RI	
≤50%	Develop alternative cleanup strategies	Feasibility Study	FS	Feasibility
	Select Remedy	Record of Decision	ROD	
≤65%	Technical Plans and Specs.	Remedial Design	RD	Preconstruction Engineering & Design
≤65%	Construction, etc.	Remedial Action	RA	Construction
< 0%	Activities which ensure clean-up working	Operation & Maintenance	O&M	Operations & Maintenance
	Site Officially Clean.	Deletion from NPL	NPL	
	FUNDING	**Responsible Parties Pay (joint & several)**		**≤ 65 % Federal Cost Share (design & construction)**

5. PHASE 2 STRATEGY:

Integrate with Natural Resource Damages Trustees

AGENCY	REGULATION
EPA United States Environmental Protection Agency	**Superfund / Brownfields** **Clean Water Act /RCRA**
US Army Corps of Engineers®	**Brownfields /Clean Water** **Urban Renewal** **Environmental Remediation**
Office of Maritime Resources, NJ Department of Transportation	**Navigational Dredging** **Ecosystem Restoration** *(Water Resource Dev. Act)*
NRDA Trustees NOAA, U.S. Fish & Wildlife Service	**Natural Resources Damages** *(Superfund)*

5. PHASE 2 STRATEGY:

Integrate with Natural Resource Damages Trustees

AGENCY	REGULATION	SYNERGY
EPA United States Environmental Protection Agency	**Superfund** **Clean Water Act /RCRA**	1
	Brownfields **Urban Renewal** **Environmental Remediation**	+ 1
US Army Corps of Engineers®	**Navigational Dredging** **Ecosystem Restoration** *(Water Resource Dev. Act)*	+ 1
NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce; U.S. Fish & Wildlife Service	**Natural Resources Damages** *(Superfund)*	+ 1
		>>4

Office of Maritime Resources NJ Department of Transportation

5. The STRATEGY: Integrate existing programs

STEP 1:

Control Ongoing Sources

CLEAN WATER ACT(TMDL) /RCRA

Regulatory Source Control $

STEP 2:

Assess Risk / Remediate Sediments

SUPERFUND

PRPs $: "Polluter Pays"

STEP 3:

Ecosystem Restoration

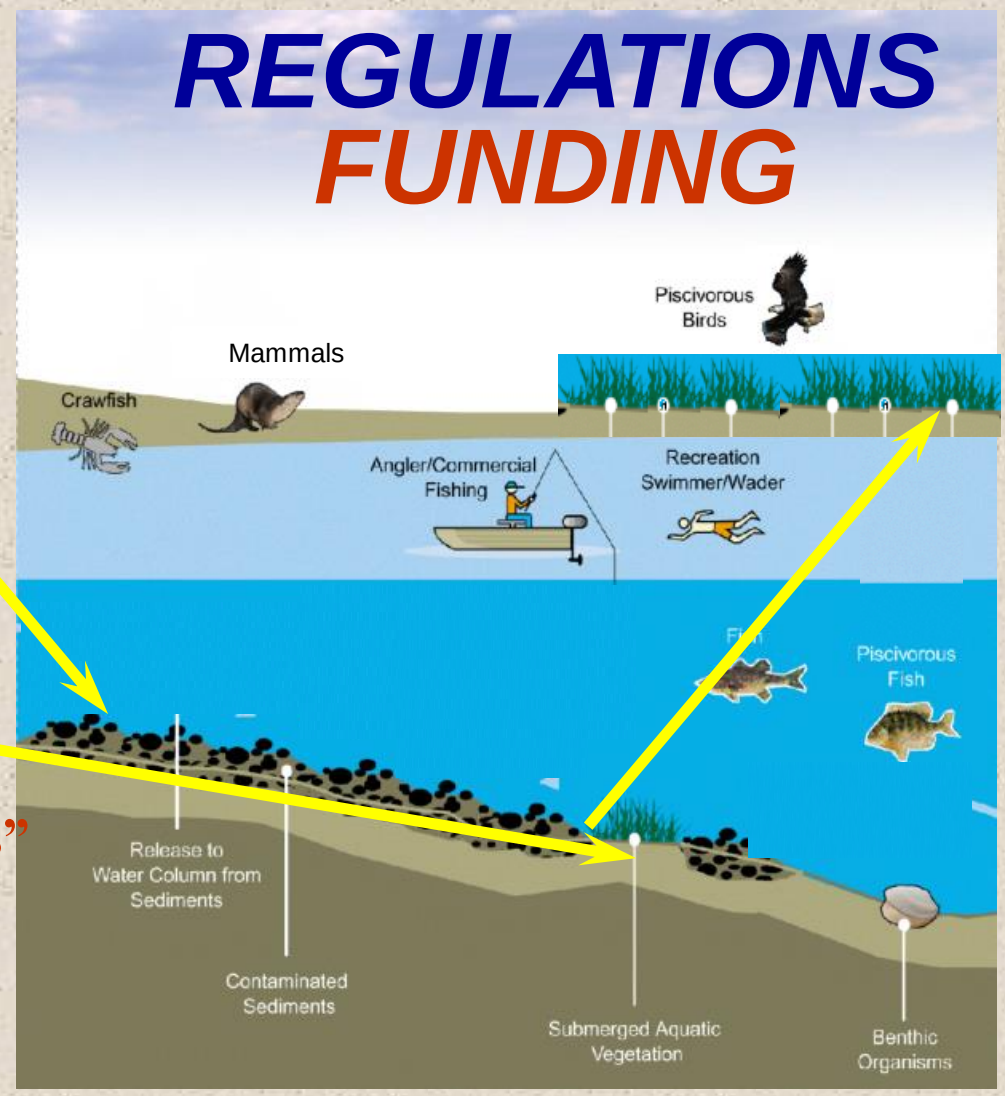
NRD *(Superfund)*

PRPs $: "Past & Future Damages"

WRDA

"Ecosystem Restoration"

"Sediment Decontamination"



USACE $: "Match" up to $ 0.65 for each Local Sponsor* $ 0.35

(*Non-Federal Share including PRPs, State, & Local)

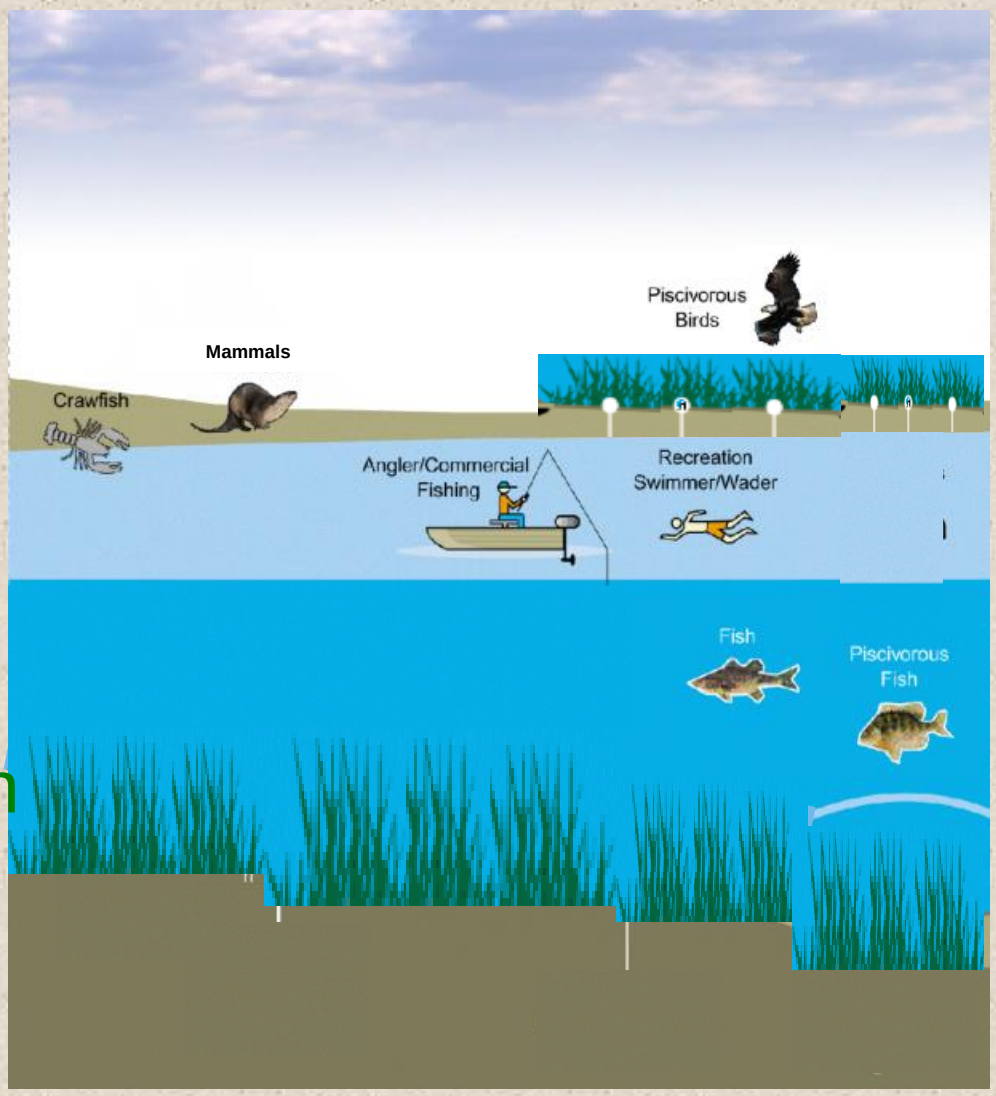
5. The STRATEGY: Integrate existing programs

Synergy 1

Restoration

Mitigation

Remediation



Synergy 2

US Army Corps of Engineers

NOAA

U.S. Fish & Wildlife Service

≤ 65% Restoration WRDA Match

≥ 35% Restitution via local sponsor (PRP) *'contribution'*

5. The STRATEGY: Integrate existing programs

Synergy 3

WRDA / Decontamination Program (1993, $40MM)

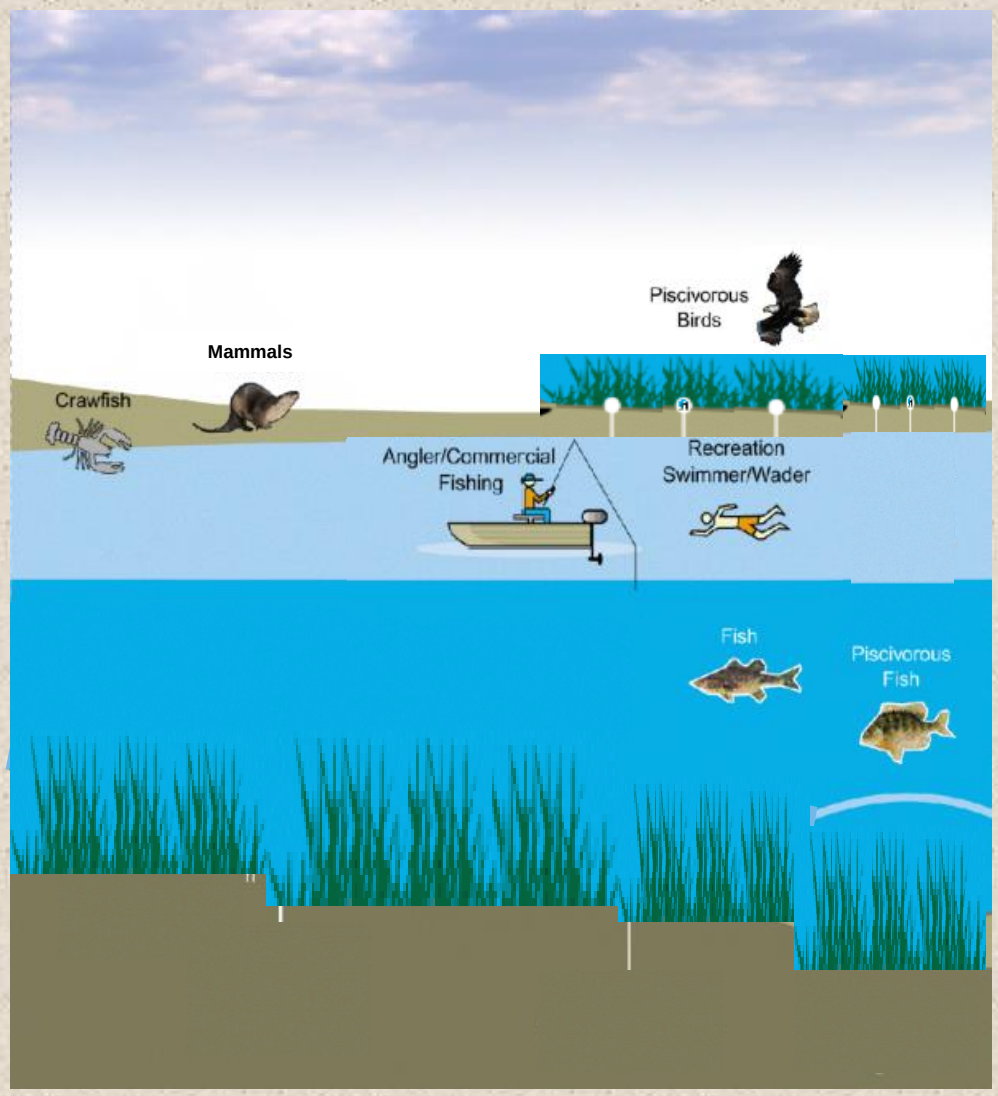
"Brownfields – Beneficial Use"
Site Restoration Initiative - NPS

Synergy 4

Clean Water Act - TMDL

Superfund - Sediments

"Fishable / Swimmable"



5. The STRATEGY: Integrate existing programs

Incentive 1

EPA United States Environmental Protection Agency

SUPERFUND

Incentive 2

NOAA · U.S. Fish & Wildlife Service

NRD

Incentive 3

US Army Corps of Engineers®

$

WRDA

Matching Funds

Unified Settlement

Addresses:

- Superfund Liability;
- NRDA Liability; *plus*
- Public Shares

KNOW:

1. **Passaic River Sediments are contaminated**
2. **Impacts to human & ecological health**
3. **Impacts to the regional economy**

REQUEST:

1. **Fund an integrated, scientific study**
2. **Develop and evaluate management options**
3. **Partnership with USACE, NJDOT, and NJDEP**

COST: ***$1-2MM/year*** *for 5 to 7 years (recoverable)*

1972 Clean Water Act
GOAL: Swimmable & Fishable

"Fishable / Swimmable"

Passaic River Baptism

USEPA R2: Governmental Partnering Strategy Distinguishing Factors

- **Ready 'to go'**
- **Risk Based Cleanup Standards**
- **Local Sponsor Support**
- **NGO Support**
- **Federal / State Expertise**
- **Polluter Pays Principle** *(NCP)*
- **Consistent with National Contingency Plan**
- **Natural Resource Trustee Involvement**

USEPA Region 2

- **Approve ongoing USEPA / USACE approach**
  (don't wait for URRI legislation)
- **Request that USEPA leads the RI / FS**
- **Request that USACE leads the Design/Construction**
- **Begin Implementing Phase 2 Strategy**
  – i.e. including NRDA Trustees

Next Steps

- Brief Congressional Delegation & Local Politicians
- Brief ‘new’ NJDEP leadership
- Brief CLH and other PRPs
- Sign EPA/ACE Memorandum of Agreement
- Announce to Stakeholders
- Phase 2 Strategy
  - formalize integrated Superfund/WRDA/NRDA plan with NRDA Trustees

The End

Miscellaneous Backup Slides

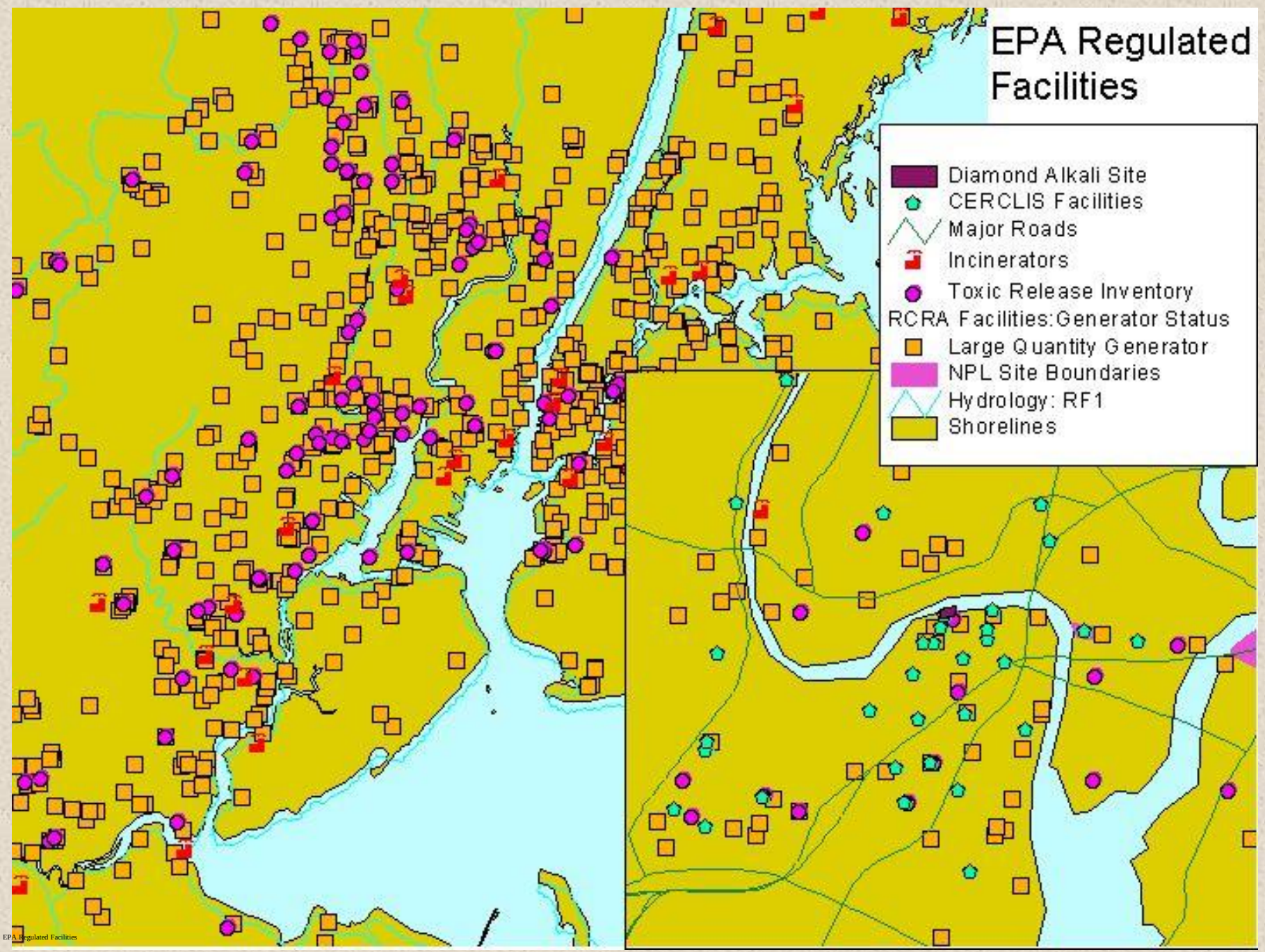
Comparison of
"Government Partnering" & *"PRRI"* Strategies

R2Governmental Partnering Approach (USEPA/USACE/OMR-NJDOT)	Passaic River Restoration Initiative (CLH & Dawson Assoc.)
• Risk Based	• Restoration Based
• Unified Superfund & WRDA Studies	• Parallel Superfund and WRDA Studies
• Superfund Hammer	• No Superfund Hammer
• USEPA Lead	• USACE Lead
• Local Sponsor(OMR/NJDOT)	• No Local Sponsor

Comparison of
"Government Partnering" & *"PRRI"* Strategies

	Pluses	Minuses
Governmental Partnering Approach (USEPA/USACE/NJDOT)	**Federal Expertise:** **Human Health Risk Assess.** **Ecosystem Health Risk "** **Navigational Dredging** **Ecosystem Health** **Polluter Pays Principle** **Public Support** **Multiple funding sources (PRP's, WRDA, economic redevelopment incentives)**	**Potential CERCLA Litigation**
Passaic River Restoration Initiative (CLH & Dawson Assoc.)	**Limited need for Inter-Agency Coordination** **USACE expertise Navigation**	**No Superfund hammer** (& no hh/eco req.) **No NRDA hammer** (litigation likely) **USACE: no hh and eco-risk expertise** **NGO Opposition – strict WRDA process** **If NCP is not followed expectation that USEPA could pursue recalcitrant PRPs is unrealistic** **USEPA's leadership role re: CWA altered** **Potential Loss of Local Sponsor**

USEPA/USACE	PRP/Dawson
Fairly apportion liablity Incorporate appropriate public funding NRDA built into process	Minimize liability Maximize Public Funding Undetermined, legally, if trustees would still have NRDA hook
Incorporate risk analysis into decision making	Eliminate risk assessment
Watershed approach – Superfund's 6 miles folded in at study phase State Concurrence with Approach	Watershed Approach but separate Superfund 6 mile study – coordinate studies at ROD State would no longer serve as local sponsor
Combined remedial, navigational, and watershed study	Habitat / navigation watershed study



EPA Regulated Facilities

Major Project Tasks

Task 1 – Data Inventory ·

Task 2 – Build Database

Task 3 – Point/Non-point Source ID

Task 4 – P/NP Source Sampling

Task 5 – Upstream Characterization

Task 6 – RI Report

Task 7 – Risk Assessment & FS

Task 8 – TMDL ·

Task 9 – Coordinate w HEP/CARP

Task 10 – Coordinate w Sed Decon

Task 11 – Partner: Reuse / Redevel-opment Urban Waterfront

Task 12 – Partner: Fed/Private Funding Sources

Task 13 – Proposed Plan / ROD

Stakeholders

(who've showed Interest in 2001)

GOVERNMENT	U.S. Congressman Menendez	
	U.S. Senator Corzine	
	U.S. Senator Torricelli	
	U.S. Congressman Kearns	
	Harrison Mayor McDonough	
	Newark Councilman Amador	
REGIONAL	DMMIWG	- Jim Tripp (EDF)
	Nation's Ports	- Frank McDonough
	Port Authority	- Richard Larrabee
PRIVATE SECTOR	Maher Terminals	- Sam Crane
	CLH's PRRI	
	Passaic River Watch	- Alan Parsons
NGOs	Passaic River Coalition	- Ella Fillipone
	Environmental Defense	- Jim Tripp
	Bay Keeper	- Andy Wilner
	Ironbound Com. Corp.	- Evan Aksay

Stakeholders: Environmental Groups

- Passaic River Coalition
- Baykeeper
- Friends of the Passaic
- Ironbound Comm. Against Toxic Waste
- Ironbound Community Corporation
- Passaic River Rowing Association
- Newark Waterwatch
- NJ Public Interest Research Group
- Habitat for Humanity
- Spirit of Newark
- American Rivers
- Sierra Club
- New Community Corporation
- Assoc. of N.J. Environmental Comm.
- Essex County Environmental Comm.
- Newark Regional Business Partnership
- La Casa de Don Pedro
- Newark Alliance
- Greater Newark Conservancy
- Environmental Defense Fund
- Rutgers University Law Clinic
- New Jersey Sierra Club
- NRDC
- American Aubon Society
- American Littoral Society
- Baymen's Protective Assoc.
- Clean Ocean Action
- Hudson River Fisherman-NJ
- Seafarers International Union
- Jersey Coast Anglers Association
- Mid-Atlantic Fisheries Management Council
- Monmouth County Friends of Clearwater
- Natural Resources Protective Association
- NJ Council of Diving Clubs
- NJ State Federation of Sportsmen's Club
- NY/NJ Baykeeper
- Salt Water Anglers of Bergen County
- Save the Bay

Stakeholders: Federal & Local Officials

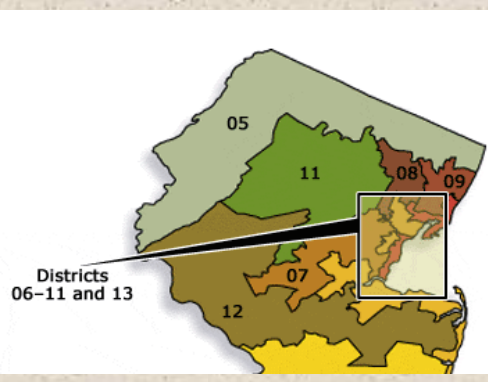
Federal Elected Officials

Senators

Torricelli (D) **Corzine** (D)

Congressmen

Ferguson (R07) **Frelinghuysen** (R11) **Menendez** (D13)
Pallone (D06) **Pascrell** (D08) **Payne** (D10)
Rothman (D09)



County & Local Elected Officials

Essex County Exec. Treffinger
Bergen County Freeholder Bern
Passaic County Freeholder Cuccinello
Bergen County Exec. Schuber
Hudson County Exec.Janiszewski

Newark Mayor James
Garfield Mayor Aloia
Rutherford Mayor McPherson
Lyndhurst Mayor Guida
Harrison Mayor McDonough
Belleville Mayor Escott
Wallington Mayor Wargacki
N. Arlington Mayor Kaiser
Kearny Mayor Santos
Passaic City Mayor Semler

RECENT DRIVERS

NJDEP Risk Study

USACE / CLH Legislative Initiative

CLH / Dawson Associates
USEPA / USACE / Congressional Lobbying

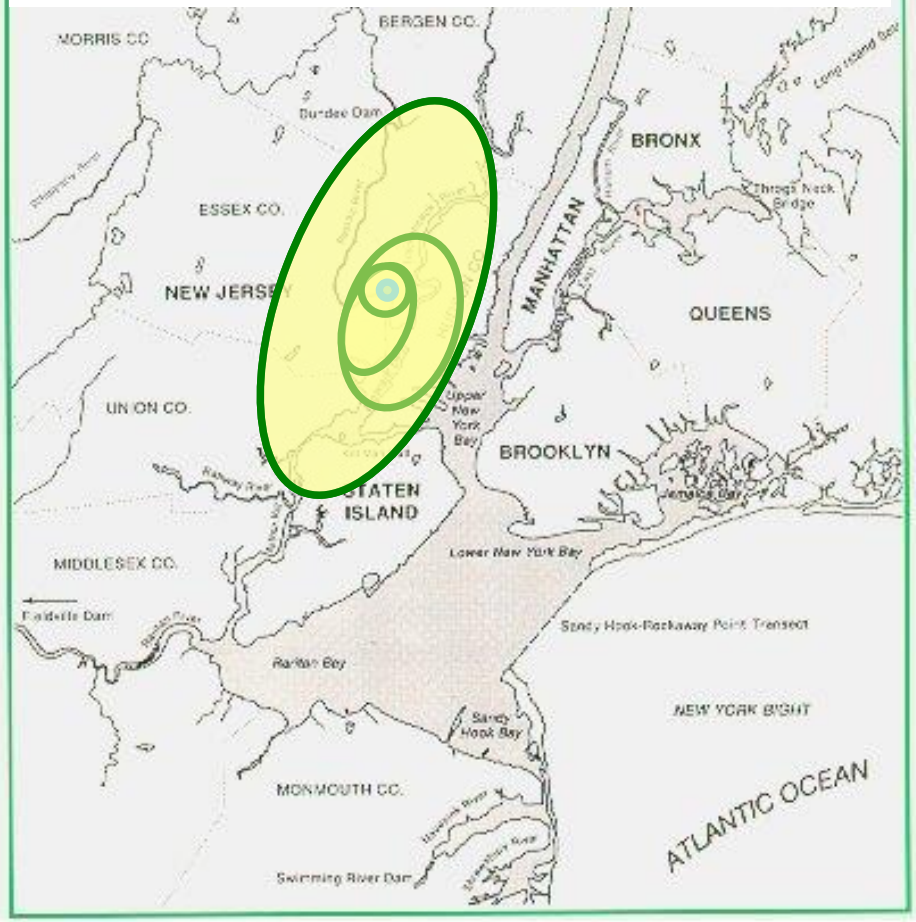
Bay Keeper – Andy Wilner

DMMWIG – Jim Tripp & PANY-NJ

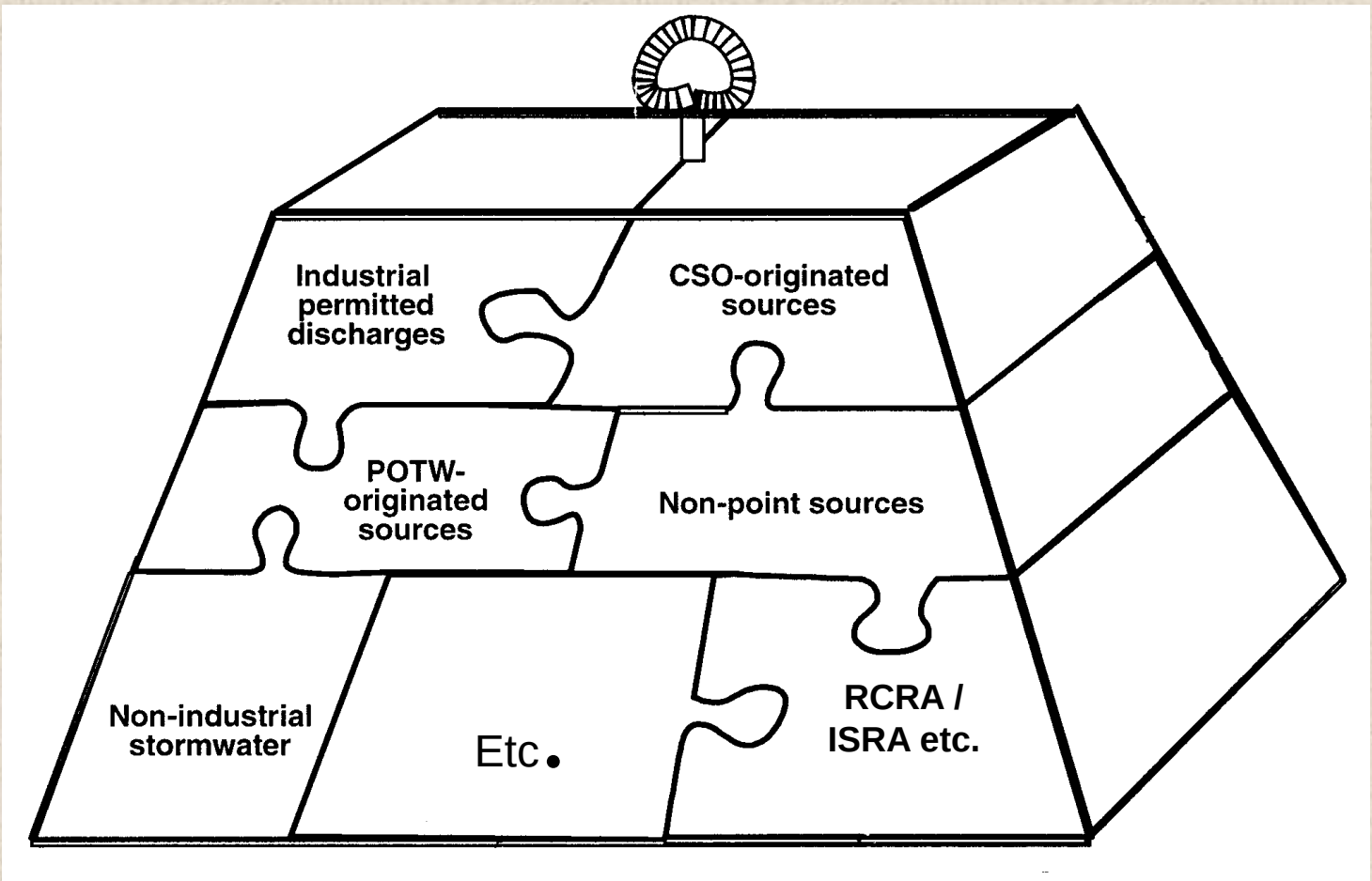
GOALS

- ecological health
- human health
- minimize economic impacts on navigational dredging disposal costs

Passaic – Hackensack -Newark Bay
Tidal Sub-System of
NY – NJ HARBOR ESTUARY



Who Should Pay ?



HARBOR ESTUARY PROGRAM TMDL SCHEDULE

Activity	Timeframe
List of Toxics of Concern for Water and Biota in Harbor	Completed
Tier 1 Model Complete	Dec 2002
Identify water quality-limiting substances	Apr 2003
Preliminary TMDLs and Management scenarios	Oct 2003
Tier 2 Model - Refine TMDLs and Management Scenarios	April 2004
States develop proposed TMDLs	Oct 2004
State public notice of proposed TMDLs	Nov 2005
Submittal of final TMDLs to EPA	May 2006

Comprehensive Port Improvement Plan for the Port of New York and New Jersey - GOALS

1. **Identify the port improvements necessary to maintain the status of the Port of New York & New Jersey as the preeminent port on the U.S.Atlantic Coast**
2. **Link the CPIP to existing regional planning efforts.**
3. **Develop the CPIP consistent with the enhancement of the environmental quality of the estuary.**
4. **Link development with efforts to improve environmental quality**
5. **Adopt "Green Port" (GP) planning criteria to guide development options**
6. **Create more certainty in the federal, state, and local permit review processes to create needed port expansion capability.**
7. **Maximize public participation to ensure that port development projects achieve regional consensus**

Pictures - 2000

Range of Potential Cleanup Cost

OLD ESTIMATES

(circa 1990s technologies, no hybrid solutions)

1996

USACE: $ 4,000,000,000 (17 miles w 1 ft.dredging, capping / Utah disposal)

1999

NJ-OMR: $ 460,000,000 (6 miles 10-20 ft. dredging, w decon @ $50/CY)

No reference found yet

19??

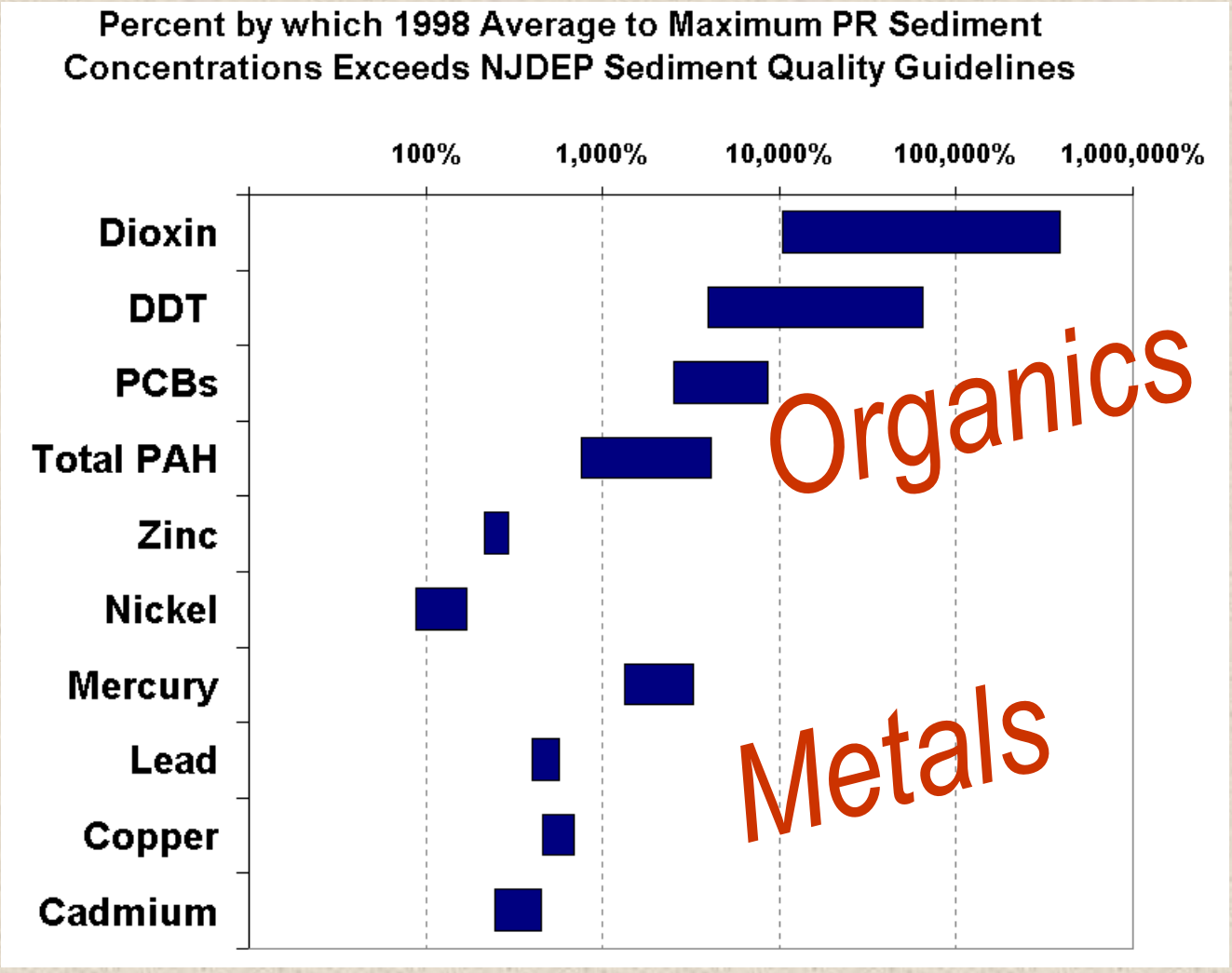
US???: $ 2,000,000,000 (6 miles w ?? ft. dredging, /capping)

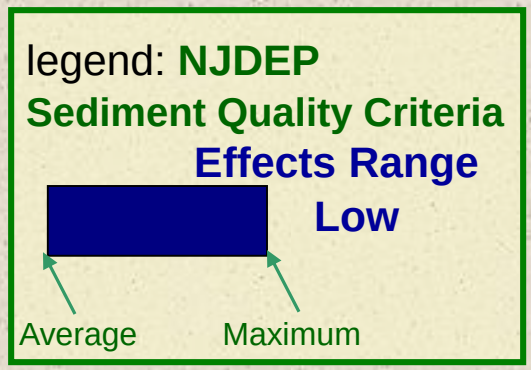
Bullet High--powered rifle	1,340 mph,	"faster than a speeding bullet."
U.S. military spy plane, the SR-71.		
Top theoretical speed (Mach 7)	> 5,000 M.P.H.	(speed of sound ~ 660 mph)
Tested speed	> 2,200 M.P.H	
Rocket sled	6,121 mph.	
Satellite / Space shuttle	17,500 mph	[250 kilometers above the earth's surface to stay in orbit]
Escape velocity from the earth the speed necessary to escape totally from earth's gravitational field into deep space	25,000 mph	
Sandia N. L. hypervelocity launcher	36,000 mph	[< 0.3 gms]

Corporate Entities

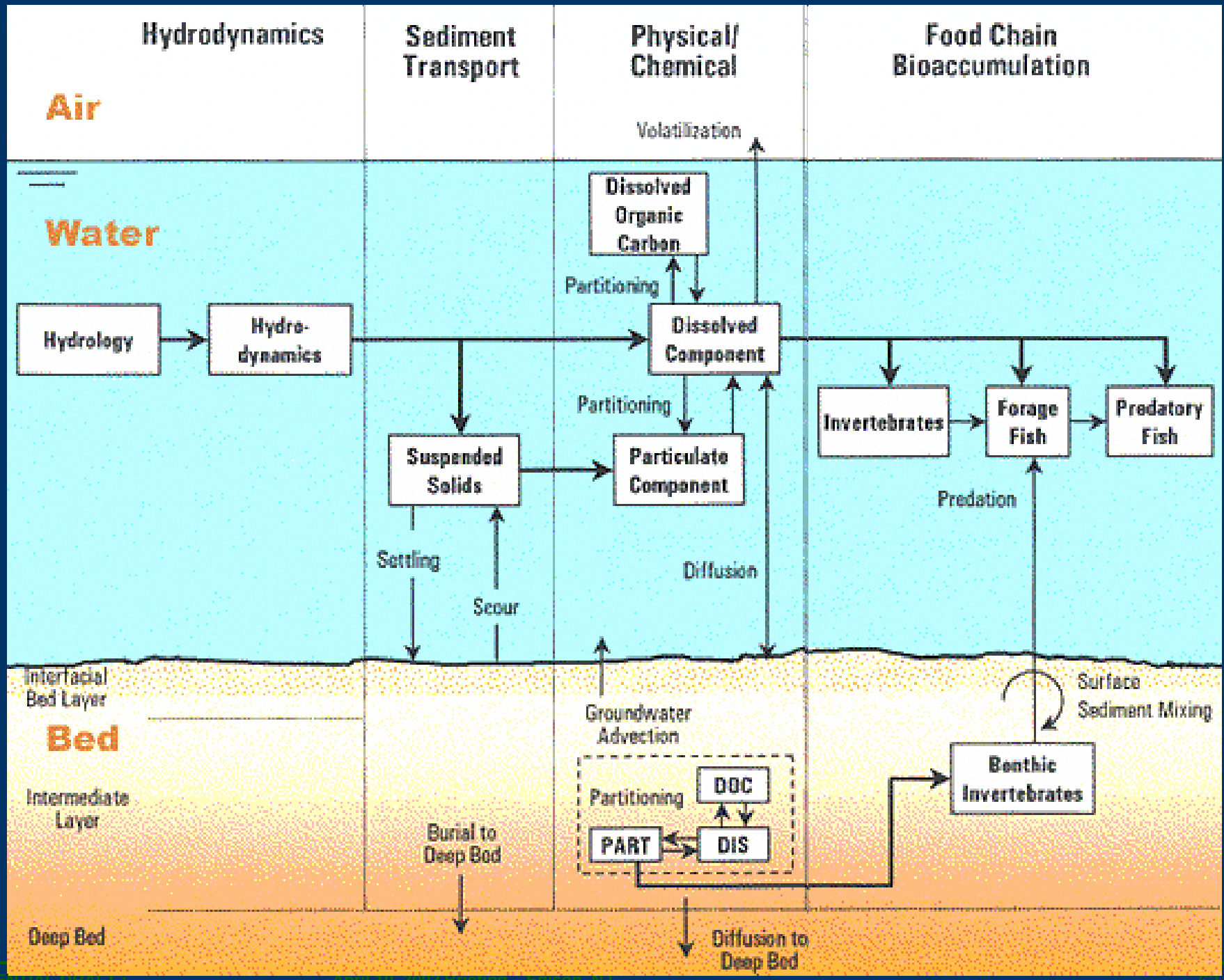
YEAR	Status / Action	Company	Subsidiary of:
1951- 69	Operated as	Diamond Alkali Co.	
1967	Changed name to	Diamond Shamrock Co.	
1969	Cease production		
1983	Changed name to	Diamond Shamrock Chemical Co.	
1986	Sold to	Oxy-Diamond Alkali Co.	Occidental Petroleum Co.
1987	Changed name to	Occidental Electrochemicals Corp.	" " "
1987	Merged into	Occidental Chemical Corp.	" " "
19XX	Sold to	Maxus Chemical	
19YY	Sold to	Chemical Land Holdings	

2. The PROBLEM: Contaminated Sediments





1998 Data Exceeds NJDEP SQG by Orders of Magnitude


Hydrodynamics
Sediment Transport
Physical/ Chemical
Food Chain Bioaccumulation
Air
Volatilization
Water
Dissolved Organic Carbon
Partitioning
Hydrology
Hydro-dynamics
Dissolved Component
Partitioning
Invertebrates
Forage Fish
Predatory Fish
Suspended Solids
Particulate Component
Predation
Settling
Scour
Diffusion
Interfacial Bed Layer
Bed
Groundwater Advection
Surface Sediment Mixing
Benthic Invertebrates
Intermediate Layer
Partitioning
DOC
PART
DIS
Burial to Deep Bed
Deep Bed
Diffusion to Deep Bed

GOALS

- ecological health
- human health
- minimize economic impacts on navigational dredging disposal costs

Passaic – Hackensack -Newark Bay
Tidal Sub-System of
NY – NJ HARBOR ESTUARY

KNOW: **The Passaic River – Newark Bay system has been polluted by contaminated sediments for decades with identified impacts to human & ecological health plus the regional economy (navigational dredging)**

REQUEST: **Fund an integrated, scientific study so that we can develop and evaluate management options jointly with USACE, NJDEP, and NJDOT-OMR**

COST: **$10,000,000 USEPA** *($1-2MM/year-recoverable)*
$ 9,000,000 USACE/NJDOT-OMR